

CLAIMS

What is claimed is:

- 1 1. A method of controlling a DC feed from a subscriber loop interface
2 circuit (SLIC), comprising the steps of:
3 switching from a normal mode DC feed following a first characteristic
4 curve to a modified mode DC feed following a second characteristic curve
5 when $V_M \leq V_{THRESH1}$, wherein V_M is a subscriber loop voltage; and
6 switching from the modified mode to the normal mode when
7 $V_M \geq V_{THRESH2}$, wherein $V_{THRESH1} < V_{THRESH2}$.
- 1 2. The method of claim 1 wherein the first characteristic curve is linear,
2 wherein the first characteristic curve is defined by an open circuit voltage,
3 V_{OC} , and a slope corresponding to a pre-determined impedance.
- 1 3. The method of claim 1 wherein the first characteristic curve is linear,
2 wherein the second characteristic curve is defined by a target open circuit
3 voltage, V_{OC_TARGET} , and a slope corresponding to a pre-determined impedance.
- 1 4. The method of claim 1 wherein the first and second characteristic
2 curves are linear, wherein the first characteristic curve is defined by an open
3 circuit voltage, V_{OC} , and a pre-determined slope, wherein the second
4 characteristic curve is defined by a target open circuit voltage, V_{OC_TARGET} , and
5 the same pre-determined slope corresponding to a pre-determined
6 impedance.

- 1 5. The method of claim 4 wherein the pre-determined impedance is
2 approximately 320Ω.
- 1 6. A subscriber loop interface circuit apparatus comprising:
2 control circuitry for controlling a subscriber loop DC feed; and
3 a plurality of programmable registers storing values defining a first
4 characteristic curve and a second characteristic curve, wherein the control
5 circuitry switches from a normal mode DC feed following a first characteristic
6 curve to a modified mode DC feed following a second characteristic curve
7 when $V_M \leq V_{THRESH1}$, wherein V_M is a subscriber loop voltage, wherein the
8 control circuitry switches from the modified mode to the normal mode when
9 $V_M \geq V_{THRESH2}$, wherein $V_{THRESH1} < V_{THRESH2}$.
- 1 7. The apparatus of claim 6 further comprising a digital signal processor.
- 1 8. The apparatus of claim 6, wherein one of the plurality of
2 programmable registers stores an open circuit voltage value, wherein the
3 open circuit voltage value in conjunction with a pre-determined slope
4 defines a linear first characteristic curve.
- 1 9. The apparatus of claim 6, wherein one of the plurality of
2 programmable registers stores a value enabling computation of a target open
3 circuit voltage value, wherein the target open circuit voltage value in

4 conjunction with a pre-determined slope defined a linear second
5 characteristic curve.

1 10. The apparatus of claim 9 wherein the plurality of registers store an
2 open circuit voltage value (V_{OC}), a first relative threshold (V_{THL}), a second
3 relative threshold (V_{THH}), and a relative target open circuit voltage (V_{OC_DELTA}),
4 wherein $V_{THRESH1} = V_{OC} + V_{THL}$, $V_{THRESH2} = V_{OC} + V_{THH}$, and the target open circuit
5 voltage = $V_{OC} + V_{OC_DELTA}$.

1 11. The apparatus of claim 6 wherein the first and second characteristic
2 curves are linear, wherein the first characteristic curve is defined by an open
3 circuit voltage, V_{OC} , and a pre-determined slope, wherein the second
4 characteristic curve is defined by a target open circuit voltage, V_{OC_TARGET} , and
5 the same pre-determined slope corresponding to a pre-determined
6 impedance.

1 12. The apparatus of claim 11 wherein the pre-determined impedance is
2 approximately 320Ω.